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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/558,562	04/26/2000	Masahiro Ohishi	463P065	1512

7590

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EXAMINER

THOMAS, COURTNEY D

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 05/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/558,562

Applicant(s)

OHISHI ET AL.

Examiner

Courtney Thomas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 6-8 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 6-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Key et al. (U.S. Patent 5,241,360) in view of Ohtomo et al. (U.S. Patent 5,909,311).

3. As per claim 1, Key et al. disclose a distance measuring system (abstract), for measuring distance by receiving a reflection light beam from an object to be measured, comprising a control arithmetic unit (i.e. control unit; see column 3, lines 25-27; Fig. 1 #30), a light emitting unit (i.e. Fig. 1, #22) for emitting a measuring light beam and a photo-detection unit (i.e. Fig. 1, #56; column 6, lines 48-51) for receiving said reflection light beam (i.e. Fig. 1, #42) from an object (i.e. Fig. 1, #38) to be measured, and for issuing a signal based on a photo-detection amount of said reflection light beam, and wherein there is provided presorted data that is obtained by associating the measured distance and the photo-detection amount of said reflection light beam according to said object to be detected, wherein said control arithmetic unit compares said reflection light beam from said object to be measured, as a result of distance measurement based on said reflection light beam and said presorted reference data. Key et al. however, do not explicitly disclose a measuring system configured to determine whether said object to be measured is a prism or a natural object based on the result of the comparison. Examiner takes official notice that the use of displays are conventional tools available to the experimenter and

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would be obvious to the skilled artisan to incorporate for the purpose of viewing results, (i.e. graphs), real time analyses, experimental logic/ procedure and the like.

4. Ohtomo et al. teach an operability of an object detection scheme wherein a particular object is distinguished over another based on the receipt of a characteristic reflected light signal (see abstract; i.e. Fig. 1). In particular, Ohtomo et al. point out that in many object detection systems, a common difficulty is the inability to discriminate reflected signals from a particular object, and thus difficult to identify the presence of an object of interest (see column 1, lines 35-42). Ohtomo et al. teach a method of identifying/ determining the presence of an object of by way of configuring a system to be responsive to characteristics of reflected signals. Once the system is configured to sense a particular reflected characteristic, the object of interest can be accurately identified.

5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Key et al., such that it was configured to determine whether the object to be measured is a prism or a natural object. One would have been motivated to make such a modification, based on the teaching of Ohtomo et al., that recognizing reflected light signals allows one to accurately distinguish the presence of an object of interest amidst objects of non-interest.

6. As per claim 2, Key et al., as modified, disclose a distance measuring system further comprising a density filter for adjusting said photo-detection amount of said reflection light beam from said object to be measured, wherein an adjusting position of said density filter is associated with said measured distance, and said reference data obtained by the association is stored for judging said object to be measured as said reference data (see column 7, lines 27-60).

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7. As per claim 6, Key et al., as modified, disclose a distance measuring system, wherein there are provided at least a prism measurement mode and a non-prism measurement mode (i.e. column 5, lines 36-48; Fig. 3), and when said prism mode is selected, said distance is displayed on said display unit only when said object to be measured is judged as a corner cube, and the fact that said object to be measured is not a corner cube is displayed on said display unit when said object to be measured is not judged as a corner cube (see Fig. 2, and respective portions of specification).
8. As per claim 7, Key et al. as modified, disclose a distance measuring system wherein photo-detection sensitivity can be automatically changed over according to said photo-detection amount of said reflection light beam from said object to be measured, said object to be measured is judged according to said photo-detection amount, and a result of judgment on said object to be measured is displayed on said display unit (i.e. column 8, lines 33-39 and respective portions of the specification).
9. As per claim 8, Key et al. disclose a distance measuring apparatus as recited in claim 1, except a mode changing switch for selecting a prism mode for using a prism as said object to be measured and a non-prism mode for using a natural object as said object to be measured.
10. Ohtomo et al. teach that various materials/objects will reflect light, having characteristics commensurate with that particular material/object (see abstract; i.e. Fig. 1). Ohtomto et al. implicitly teach the selectivity of a detection scheme for identifying an object of interest (i.e. Fig. 1).
11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Key et al. such that it incorporated a mode-

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changing switch to identify an object to be measured. One would have been motivated to make such a modification, based on the teaching of Ohtomo et al. that detection systems configured to be responsive to an object of interest allow for the identification of a particular object in the presence of non-objects of interest.

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Key et al. (U.S. Patent 5,241,360) in view of Ohtomo et al. (U.S. Patent 5,909,311) and further in view of Schreuder (U.S. Patent 4,646,092).

13. As per claim 4, Key et al., as modified in view of Ohtomo et al., disclose a distance measuring apparatus, except the reference data relating to the reflection of said object to be measured contains change of said photo-detection amount due to weather conditions as a tolerance value.

14. Schreuder teaches that distance measuring systems often lack accuracy measurements due to the receipt of reflected light signals containing transmission noise and/or multi-path reflections. Schreuder further teaches that inaccuracies originating from multi-path reflections (i.e. propagation and/ or weather conditions) are in essence, unpredictable and can only be assessed on a statistical basis from experience (see column 4, lines 10-40). Schreuder implicitly teaches, however, that the use of a database of collected behavioral characteristics could refine the accuracy of signal information in lieu of ideal propagation conditions.

15. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to modify Key et al., as per the teachings of Schreuder, to include a reference database containing changes in photo-detection values due to environmental

conditions, so that obtained distance measurements are free from inaccuracies originating from changes in the light propagating environment.

Response to Arguments

16. Applicant's arguments filed 3/18/02 have been fully considered but they are not persuasive. In particular, Key et al. has been provided with supporting references to meet the limitations as added by amendment. It is the position of the examiner that Ohtomo et al. (U.S. Patent 5,909,311) provides sufficient motivation for modifying Key et al. to configure the system to determine whether the object to be measured is a prism or a natural object. Ohtomo et al. teach that configuring a system to be responsive to changes in reflected light signals can allow the detection of a particular object of interest. Through this teaching, Ohtomo et al. also teach that various materials can reflect light in a unique manner, and hence, reflect signals characteristic to the object/material (i.e. Fig. 1). Figure 1, in Ohtomo et al., teaches the selectivity of the detection apparatus, allowing the device to be responsive to an object of interest or non-object of interest. Practitioners in the detection art, it is believed, would readily recognize the benefits of these teachings.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (703) 306-0473. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305 3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7227 for regular communications and (703) 746-7227 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

Courtney Thomas

April 23, 2002


ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800